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ABSTRACT

As part of a study appraising the industrial cocperative education program at Macomb County Community College (MCCC), 54 wcmen enrolled from 1970 to 1975 in Design and Mechanical Technology and Graphic and Commercial Arts programs, and their employers were surveyed. A comparison of the 30 wcmen in the cooperative programs and the 24 non co-op students revealed. 16% more co-op students graduated; 26% more co-ops held program-related jobs; 13% more non co-ops had program-related previcus job experience; 12% more ncn co-ops took courses at a four-year college after MCCC; 3.3% more non co-ops are unemployed and seeking work; and 14% more ncn co-ops are unemployed and not seeking work. When comparing the women and men from the co-op group it was found that: mcre men graduated (16%), had previous job experience (18%), continued working for the co-op company (16%), and took courses at a four-year ccllege (9%); whereas 11% more women were unemployed and seeking work. The Graphic Art program accounted for 41% of the entire group of wcmen respondents; within the program, comparisons between co-op and non co-op students showed that: 26% more co-ops graduated; 18% more co-ops had program-related jobs; 12% more non co-ops were unemployed and seeking work; and 13% more non co-ops attended a four-year college after MCCC. (MB)

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MACOMB COUNTY COMMUNITY COLLEGE

DEPARTMENT OF RESEARCH

AN APPRAISAL OF THE INDUSTRIAL COOPERATIVE EDUCATION PROGRAM BASED ON RESPONSES FROM STUDENTS AND EMPLOYERS

SUPPLEMENTAL REPORT NO. 3

THE WOMEN STUDENTS

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Nancy S. Freeman
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INTRODUCTION

This report contains data compiled during the study recently conducted and released under the title:

> An Appraisal of the Industrial Cooperative Education Program Based on Responses from Students and Employers

The original design of the study did not include any distinctions by sex. After the study was completed, it seemed wise to inquire separately about the status of the women respondents.

Thirty women co-op students and twenty-four women non co-op students participated in the study. The purpose of this report is to present the responses of the women students.

A brief summary of the main report is included in this report to provide background information. The format of the tables used in the following pages is parallel to the format used in the previous two supplemental reports. The data on Tables 2 and 3 compare responses from the women students with those tabulated for the men in the study.

SUMMARY OF THE MAIN REPORT

The objective of this study was to appraise MCCC's Industrial Cooperative Education Program. Students enrolled in Design and Mechanical Technology from 1970 to 1975 were queried, as were their employers. The student and company samples were compiled from college records. Information received was tabulated and analyzed by computer and yielded corresponding counts, percentages, and statistical significances.

Sixty-five percent of the co-op respondents are employed in program related full-time jobs. The co-op group is more likely to use college services when seeking employment than the non co-op group. Only 3.57 percent of the co-op group is unemployed, in contrast to 6.57 percent of the non co-op group. Sixty-seven percent of the co-op students graduated from MCCC, whereas only 38.68 percent of the non co-op students graduated. On six of the seven items designed to evaluate the preparation received at the college, the co-op group was more likely to give higher ratings than the non co-op group. Three of the six differences were statistically significant.

In every subgroup category the non co-op group reported higher salaries. Differences in five of the six subgroups were statistically significant.

The employers who responded indicated a favorable rating of the employees trained at MCCC. While half of the employers felt that former co-ops tend to be promoted faster than non co-ops, the other half felt that there was no difference in the promotion rates of the two groups.

The employers perceived employees who had the co-op experience as more efficient and able to learn more quickly on the job when compared with employees who did not have the co-op experience.

Comments and suggestions given by respondents are included in the report, along with the instruments and letters used to conduct the study.

WOMEN STUDENT RESPONDENTS

The seven tables which display the data concerning the women respondents follow this brief descriptive narrative. Table 1 lists the programs in which the women were enrolled. It is obvious that the uneven spread made separate tabulations impractical except for the Graphic and Commercial Art Program. One-third of the non co-op women in the sample did not indicate program affiliation. This is about the same division as noted in the main report for the total non co-op group.

Table 2 contains important data in eleven categories for women co-op and non co-op groups along with data pertaining to their male counterparts.

When comparing the women co-ops with the women non co-ops it is apparent:

1. that 16 percent more women co-ops graduated
2. that 26 percent more women co-ops hold program related jobs
3. that 13 percent more women non co-ops had program related previous job experience
4. that 12 percent more women non co-ops took courses at a four-year college after MCCC
5. that 3.3 percent more women non co-ops are unemployed and seeking work
6. that 14 percent more non co-op women are unemployed and not seeking work.

Differences between the women and men from the co-op group are more striking. The calculations show:

1. that 16 percent more men graduated
2. that almost 18 percent more men had previous program related job experience
3. that 16 percent more men continued working for the co-op company
4. that 9 percent more men took courses at a four-year college after MCCC
5. that 11.08 percent more women are unemployed and seeking work
6. that 3.52 percent more women are unemployed and not seeking work.

The non co-op women and men gave responses that held fewer large differences. The categories describing the rate of unemployment for non co-op men and women showed:

1. that 11.07 percent more women non co-ops are unemployed and seeking work
2. that 16.43 percent more women non co-ops are unemployed and not seeking work.

Seven percent fewer women non co-ops hold program related jobs than do the men from the non co-op group. Also, about 15 percent more non co-op men had program related previous job experience.

Table 3 shows the monthly salaries received by some of the women students. Many women did not answer this item. Of those who did respond, the non co-op group has a higher average salary. However, the difference did not prove to be statistically significant.

Table 4 reveals the perceptions of the women students concerning the preparation received at MCCC. Differences between the co-op and non co-op groups occurred although none proved statistically significant.

Table 5 indicates that a favorable rating (2.103) of the co-op job placements was given by the women co-op respondents. Over 72 percent of the group gave the placements an "excellent" or "good" rating.

Table 6 expresses a favorable rating of the relevance of courses to the co-op job placement as perceived by women co-ops. The average rating was calculated as 2.448.

TABLE 1

Student Survey Returns Listed by Program
for the Women Respondents

	Co-op Sample N=30		Non Co-op Sample N=24	
Program	Number of Responses	% of Sample	Number of Responses	% of Sample
Auto Body Design	7	23.33	0	-
Surveying Technology	2	6.66	0	-
Architectural Drafting	3	10.00	2	8.33
Special Machine Design	1	3.33	1	4.16
Graphic & Commercial Art	12	40.00	10	41.66
Electro Technology	2	6.66	2	8.33
Fluid Power Technology	1	3.33	0	-
Industrial Supervision	0	-	1	4.16
Metrology & Calibration	1	3.33	0	-
Civil Technology	1	3.33	0	-
Not Listed by Student	0	-	8	33.33
TOTAL	30		24	

TABLE 2

Responses in Eleven Categories from Students

	Co-op Sample		Non Co-op Sample	
	Women Students N=30	Men Students N=222	Women Students N=24	Men Students N=250
Category	Percentage	Percentage	Percentage	Percentage
Graduates	53.33	68.92	37.50	38.80
Non Graduates	43.33	28.83	58.33	56.00
Program Related Job Holders	63.33	64.86	37.50	44.40
Non Program Related Job Holders	13.33	14.86	16.67	29.20
Program Related Previous Job Experience	3.33	21.17	16.67	31.20
Continued Working for the Co-op Company	23.33	39.19	-	-
Enrolled at MCCC for Job Upgrading	6.67	13.06	20.83	34.40
Enrolled at MCCC to Get a Different Job	40.00	47.75	50.00	42.80
Took Courses at a Four-Year College after MCCC	13.33	22.52	25.00	28.80
Unemployed and Seeking Work	13.33	2.25	16.67	5.60
Unemployed and Not Seeking Work	6.67	3.15	20.83	4.40

TABLE 3

Monthly Salaries[1] Received by Women Respondents to the Student Survey

	Co-op Sample N=30		Non Co-op Sample N=24	
Monthly Salary	Number of Responses	% Answering the Question	Number of Responses	% Answering the Question
$ 1 - $ 900	7	37	3	27
$ 901 - $1200	11	58	5	45
$1201 - $1500	1	5	2	18
$1501 - $1800	0	0	1	9
over $1800	0	0	0	0
No Response	11	-	13	-
Mean Score ($\bar{X}$)	= 1.684		Mean Score ($\bar{X}$)	= 2.091
Standard Deviation (S.D.)	= .567		Standard Deviation (S.D.)	= .900

[1]Each salary was converted to a score for calculation ease.
1 = $ 1 - $ 900
2 = $ 901 - $1200
3 = $1201 - $1500
4 = $1501 - $1800
5 = over $1800

TABLE 4

Preparation Received at MCCC as Perceived by Women Respondents

N=54

Preparation	Co-op Sample N=30			Non Co-op Sample N=24		
	Number of Responses	Mean[1]	S. D.[2]	Number of Responses	Mean	S.D.
Technical Knowledge	29	2.310	1.148	20	2.200	.979
Hands-on Experience	29	2.483	1.329	19	2.263	.965
Self-Understanding	28	2.321	.804	20	2.100	.995
Ability to Get Along with Others	29	2.172	.874	20	1.900	.888
Ability to Communicate with Others	29	2.241	.896	20	1.900	.888
To Get a Better Job	28	2.107	1.175	18	2.167	1.213
Overall My Program Was	29	2.241	1.005	21	2.476	1.219

[1]Scores were tabulated as follows:
1 = Excellent
2 = Good
3 = Adequate
4 = Fair
5 = Poor

[2]S.D. = Standard Deviation

TABLE 5

Rating of Co-op Job Placement as Perceived by Women Co-op Respondents

N=30

Rating[1]	Number of Respondents	% of Total Answering the Question
Excellent	12	41.38
Good	9	31.03
Adequate	2	6.90
Fair	5	17.24
Poor	1	3.45
No Response	1	-

Mean ($\bar{X}$) = 2.103

Standard Deviation = 1.213

[1]Scores were tabulated as follows:
1 = Excellent
2 = Good
3 = Adequate
4 = Fair
5 = Poor

TABLE 6

Relevance of Courses to Co-op Job Placement as Perceived by Women Co-op Respondents

N=30

Rating[1]	Number of Respondents	% of Total Answering the Question
Excellent	10	34.48
Good	7	34.14
Adequate	5	17.24
Fair	3	10.35
Poor	4	13.79
No Response	1	-

Mean ($\bar{X}$) = 2.448

Standard Deviation = 1.404

[1]Scores were tabulated as follows:
1 = Excellent
2 = Good
3 = Adequate
4 = Fair
5 = Poor

WOMEN STUDENTS FROM THE GRAPHIC AND COMMERCIAL ART PROGRAM

The Graphic and Commercial Art Program alone accounts for 41 percent of the entire group of women respondents. Women students seem to be attracted to this program rather than to others. It is not the prerogative of this report to offer reasons for this phenomenon. Twelve women co-ops and ten women non co-ops were affiliated with the program.

Table 7 exhibits data for eleven categories of responses for the program groups.

When comparing the co-op and non co-op groups it is apparent:

1. that 26 percent more women co-ops graduated
2. that 18 percent more women co-ops hold program related jobs
3. that 11.67 percent more women non co-ops are unemployed and seeking work
4. that 13 percent more women non co-ops attended a four-year college after MCCC.

The program co-op group of women students reported a lower rate of unemployment than the total group of women co-ops. Also, 13 percent more women co-ops in this program graduated than did the total group of women co-ops. Fewer (5 percent) of the program co-ops hold program related jobs when compared with the total group of women co-ops.

The program non co-op group has a 3.33 percent higher rate of unemployment than does the total group of non co-op women. The above difference is the only striking one which occurred between the program non co-op group and the total non co-op group of women students.

Table 8 presents the same data featured in Table 4 but for the program groups. Even though there are differences between the ratings given by the co-op and non co-op women in the program, the differences are not statistically significant. On only one item, "hands-on experience", does the difference slightly favor the co-op group. The same item and difference holds true when the program co-op group and the total group of women students are compared. Table 9 shows the rating given the co-op job placement by the program co-op group. The average rating of 2.250 is slightly less favorable than the 2.103 average rating calculated for the total group of co-op women.

Table 10 indicates the rating of the relevance of courses to the co-op job placement for the women co-ops. The average rating of 3.083 is considerably less favorable than the 2.448 average rating given by the total group of women co-ops.

TABLE 7

Responses in Eleven Categories from Women Students from the Graphic and Commercial Art Program

N=22

Category	Co-op Sample N=12		Non Co-op Sample N=10	
	Number of Responses	% of N	Number of Responses	% of N
Graduates	8	66.66	4	40.00
Non-Graduates	4	33.33	5	50.00
Program Related Job Holders	7	58.33	4	40.00
Non Program Related Job Holders	2	16.66	2	20.00
Program Related Previous Job Experience	0	-	2	20.00
Continued Working for the Co-op Company	3	25.00	-	-
Enrolled at MCCC for Job Upgrading	1	8.33	2	20.00
Enrolled at MCCC to Get a Different Job	3	25.00	5	50.00
Took Courses at a Four-Year College after MCCC	2	16.66	3	30.00
Unemployed and Seeking Work	1	8.33	2	20.00
Unemployed and Not Seeking Work	1	8.33	1	10.00

TABLE 8

Preparation Received at MCCC as Perceived by
Women Respondents from the
Graphic and Commercial Art Program

N=22

Preparation	Co-op Sample N=12			Non Co-op Sample N=10		
	Number of Responses	Mean[1]	S. D.[2]	Number of Responses	Mean	S.D.
Technical Knowledge	11	3.091	1.083	9	2.222	1.030
Hands-on Experience	11	2.455	1.076	8	2.500	.866
Self-Understanding	11	2.545	.656	9	2.111	.737
Ability to Get Along with Others	11	2.273	.962	9	1.778	.786
Ability to Communicate with Others	11	2.364	.881	9	1.778	.786
To Get a Better Job	11	2.545	1.076	8	2.375	.992
Overall My Program Was	11	2.636	1.068	10	2.600	1.356

[1]Scores were tabulated as follows:
1 = Excellent
2 = Good
3 = Adequate
4 = Fair
5 = Poor

[2]S.D. = Standard Deviation

TABLE 9

Rating of Co-op Job Placement as Perceived by Women Co-op Respondents from the Graphic and Commercial Art Program

N=12

Rating[1]	Number of Respondents	% of Total Answering the Question
Excellent	4	33.33
Good	5	41.66
Adequate	0	0
Fair	2	16.66
Poor	1	8.33

Mean ($\bar{X}$) = 2.250

Standard Deviation = 1.299

[1]Scores were tabulated as follows:
1 = Excellent
2 = Good
3 = Adequate
4 = Fair
5 = Poor

TABLE 10

Relevance of Courses to Co-op Job Placement as Perceived by Women Respondents from the Graphic and Commercial Art Program

N=12

Rating[1]	Number of Respondents	% of Total Answering the Question
Excellent	1	8.33
Good	4	33.33
Adequate	3	25.00
Fair	1	8.33
Poor	3	25.00

Mean ($\bar{X}$) = 3.083

Standard Deviation = 1.320

[1]Scores were tabulated as follows:
1 = Excellent
2 = Good
3 = Adequate
4 = Fair
5 = Poor

DISCUSSION

This report presented some data concerning women respondents to the recently conducted survey of former students in Industrial Technology. Relatively few women are enrolled in the programs surveyed.

When the co-op women and non co-op women are compared on the basis of selected data, the co-op women tend to be graduates holding a program related job. The non co-op women have a 3.3 percent higher rate of unemployment than do the co-op women although more non co-op women reported attendance at a four-year college.

However, it is evident that the male student respondents generally fared much better in their employment. The rate of unemployment for both groups of women is 11 percent higher than that reported by both groups of men. Also, 16 percent more of the co-op men graduated and 16 percent more co-op men continued working for the co-op company than did the women co-ops.

The Graphic and Commercial Art Program was presented individually because 41 percent of the women respondents were enrolled in that single program. The program co-op women tend to be graduates holding program related jobs at higher rates than the non co-op women.

One highly unusual occurrence was evident for the program co-op women. The average co-op job placement rating was 2.250, but the average rating of the relevance of courses to the co-op job placement was a considerably less favorable score of 3.083. The variance seems incongruent.

Table 11 presents a further breakdown of the unemployment rate for the women students. Data from Tables 2 and 7 were reorganized to emphasize the employment situation faced by the group.

Even though 41 percent of the women were enrolled in the Graphic and Commercial Art Program, only 22 percent of the unemployed women were from that one program. Actually, the Graphic and Commercial Art co-op women have the lowest rate of unemployment among the groups shown in Table 11. The non co-op women from the program group, however, experience the highest rate of unemployment.

The rest of the co-op women have a rather startling rate of unemployment of 16.67 percent. For the rest of the non co-op women the rate of unemployment is 14.29 percent.

These data on unemployment were tabulated as part of the main study in Spring 1977. The high percentage of women unemployed at that time appear significant, particularly in view of affirmative action programs which are meant to assure equal employment opportunities for women who are qualified.

TABLE 11

Unemployment Figures for Women Students

Group	Unemployed and Seeking Work		Unemployed and Not Seeking Work	
	N	%	N	%
All Co-op Women	4	13.33	2	6.67
G.C.A. Co-op Women	1	8.33	1	8.33
Other Co-op Women	3	16.67	1	5.56
All Non Co-op Women	4	16.67	5	20.83
G.C.A. Non Co-op Women	2	20.00	1	10.00
Other Non Co-op Women	2	14.29	4	28.57